The below labor categories shall be used to determine the wage determination for installation work under Category I – Audiovisual Production Services With Optional Installation Services **ONLY.**

ELECTRONICS TECHNICIAN, MAINTENANCE

Maintains, repairs, and installs various types of electronic equipment and related devices such as electronic transmitting and receiving equipment (e.g., radar, radio, television, telecommunication, sonar, and navigational aids); personal and mainframe computers and terminals; industrial, medical, measuring, and controlling equipment; satellite equipment; and industrial robotic devices. Applies technical knowledge of electronics principles in determining equipment malfunctions, and applies skill in restoring equipment operations.

ELECTRONICS TECHNICAN, MAINTENANCE I

Applies technical knowledge to perform simple or routine tasks following detailed instructions. Performs such tasks as replacing components and wiring circuits; repairing simple electronic equipment; and taking test readings using common instruments such as digital multimeters, signal generators, semiconductor testers, curve tracers, and oscilloscopes.

Receives technical guidance, as required, from supervisor or higher level technician. Work is spot-checked for accuracy.

ELECTRONICS TECHNICIAN, MAINTENANCE II

Applies comprehensive technical knowledge to solve complex problems by interpreting manufacturers' manuals or similar documents. Work requires familiarity with the interrelationships of circuits and judgment in planning work sequence and in selecting tools and testing instruments.

Receives technical guidance, as required, from supervisor or higher level technician, and work is reviewed for compliance with accepted practices. May provide technical guidance to lower level technicians.

ELECTRONICS TECHNICIAN, MAINTENANCE III

Applies advanced technical knowledge to solve unusually complex problems that typically cannot be solved solely by referencing manufactures' manuals or similar documents. Examples of such problems include determining the location and density of circuitry, evaluating electromagnetic radiation, isolating malfunctions, and incorporating engineering changes.

Work typically requires a detailed understanding of the interrelationships of circuits. Exercises independent judgment in performing such tasks as making circuit analyses, calculating waveforms, and tracing relationships in signal flow. Uses complex test instruments such as high frequency pulse generators, frequency synthesizers, distortion analyzers, and complex computer control equipment.

Work may be reviewed by supervisor for general compliance with accepted practices. May provide technical guidance to lower level technicians.

The below labor categories shall be used to determine the wage determination for installation work under Category I – Audiovisual Production Services With Optional Installation Services **ONLY.**

ENGINEERING TECHNICIAN

To be covered by the these definitions, employees must meet all of the following criteria:

1. Provide semiprofessional technical support for engineers working in such areas as research, design, development, testing, or manufacturing process improvement.

2. Work pertains to electrical, electronic, or mechanical components or equipment.

3. Required to have some practical knowledge of science or engineering; some positions may also require a practical knowledge of mathematics or computer science.

Included are workers who prepare design drawings and assist with the design, evaluation, and/or modifications of machinery and equipment.

Excluded are:

a. Production and maintenance workers, including workers engaged in calibrating, repairing, or maintaining electronic equipment (see Maintenance Electronics Technician);

b. Model makers and other craft workers;

c. Quality control technicians and testers;

d. Chemical and other non-engineering laboratory technicians;

e. Civil engineering technicians and drafters;

f. Engineers required to apply a professional knowledge of engineering theory and principles.

ENGINEERING TECHNICIAN I

Performs simple routine tasks under close supervision or from detailed procedures. Work is checked in progress or on completion. Performs one or a combination of such typical duties as:

Assembles or installs equipment or parts requiring simple wiring, soldering, or connections.

Performs simple or routine tasks or tests such as tensile or hardness tests; operates and adjusts simple test equipment; records test data.

Gathers and maintains specified records of engineering data such as tests, drawings, etc.; performs computations by substituting numbers in specified formulas; plots data and draws simple curves and graphs.

ENGINEERING TECHNICIAN II

Performs standardized or prescribed assignments involving a sequence of related operations. Follows standard work methods on recurring assignments but receive explicit instructions on unfamiliar assignments; technical adequacy of routine work is reviewed on completion; non-routine work may also be reviewed in progress. Performs at this level one or a combination of such typical duties as:

Following specific instructions, assembles or constructs simple or standard equipment or parts; may service or repair simple instruments or equipment.

Conducts a variety of tests using established methods. Prepares test specimens, adjusts and operates equipment, and records test data, pointing out deviations resulting from equipment malfunction or observational errors.

Extracts engineering data from various prescribed but non-standardized sources; processes the data following well-defined methods including elementary algebra and geometry; presents the data in prescribed form.

ENGINEERING TECHNICAN III

Performs assignments that are not completely standardized or prescribed. Selects or adapts standard procedures or equipment, using fully applicable precedents. Receives initial instructions, equipment requirements, and advice from supervisor or engineer as needed; performs recurring work independently; work is reviewed for technical adequacy or conformity with instruction. Performs at this level one or a combination of such typical duties as:

Constructs components, subunits, or simple models or adapts standard equipment. May troubleshoot and correct malfunctions.

Follows specific layout and scientific diagrams to construct and package simple devices and subunits of equipment.

Conducts various tests or experiments which may require minor modifications in test setups or procedures as well as subjective judgments in measurement; selects, sets up, and operates standard test equipment and records test data.

Extracts and compiles a variety of engineering data from field notes, manuals, lab reports, etc.; processes data, identifying errors or inconsistencies; selects methods of data presentations.

Assists in design modification by compiling data related to design, specifications, and materials that are pertinent to specific items of equipment or component parts. Develops information concerning previous operational failures and modifications. Uses judgment and initiative to recognize inconsistencies or gaps in data and seek sources to clarify information.

ENGINEERING TECHNICIAN IV

Performs non-routine assignments of substantial variety and complexity, using operational precedents that are not fully applicable. Such assignments, which are typically parts of broader assignments, are screened to eliminate unusual design problems. May also plan such assignments. Receives technical advice from supervisor or engineer; work is reviewed for technical adequacy (or conformity with instructions). May be assisted by lower level technicians and have frequent contact with professionals and others within the establishment. Performs at this level one or a combination of such typical duties as:

Develops or reviews designs by extracting and analyzing a variety of engineering data. Applies conventional engineering practices to develop, prepare, or recommend schematics, designs, specifications, electrical drawing and parts lists. Examples of designs include: detailed circuit diagram; hardware fitting or test equipment involving a variety of mechanisms; conventional piping systems; and building site layouts.

Conducts tests or experiments requiring selections and adaptation or modification of a wide variety of critical test equipment and test procedures; sets up and operates equipment; records data, measures and records problems of significant complexity that sometimes require resolution at a higher level; and analyzes data and prepares test reports.

Applies methods outlined by others to limited segments of research and development projects; constructs experimental or prototype models to meet engineering requirements; conducts tests or experiments and redesigns as necessary; and records and evaluates data and reports findings.

ENGINEERING TECHNICIAN V

Performs non-routine and complex assignments involving responsibility for planning and conducting a complete project of relatively limited scope or a portion of a larger and more diverse project. Selects and adapts plans, techniques, designs, or layouts. Contact personnel in related activities to resolve problems and coordinate the work; reviews, analyzes, and integrates the technical work of others. Supervisor or professional engineer outlines objectives, requirements, and design approaches; completed work is reviewed for technical adequacy and satisfaction of requirements. May train and be assisted by lower level technicians. Performs at this level one or a combination of such typical duties as:

Designs, develops, and constructs major units, devices, or equipment; conducts tests or experiments; analyzes results and redesigns or modifies equipment to improve performance; and reports results.

From general guidelines and specifications (e.g., size or weight requirements), develops designs for equipment without critical performance requirements which are difficult to satisfy such as engine parts, research instruments, or special purpose circuitry. Analyzes technical data to determine applicability to design problems; selects from several possible design layouts, calculates design data; and prepares layouts, detailed specifications, parts lists, estimates, procedures, etc. May check and analyze drawings or equipment to determine adequacy of drawings and design.

Plans or assists in planning test to evaluate equipment performance. Determines test requirements, equipment modification, and test procedures; conducts tests using all types of instruments; analyzes and evaluates test results, and prepares reports on findings and recommendations.

ENGINEERING TECHNICIAN VI

Independently plans and accomplishes complete projects or studies of broad scope and complexity. Or serves as an expert in a narrow aspect of a particular field of engineering, e.g., environmental factors affecting electronic engineering. Complexity of assignments typically requires considerable creativity and judgment to devise approaches to accomplish work, resolve design and operational problems, and make decisions in situations where standard engineering methods, procedures, and techniques may not be applicable. Supervisor or professional engineer provides advice on unusual or controversial problems or policy matters; completed work is reviewed for compliance with overall project objectives. May supervise or train and be assisted by lower combination of such typical duties as:

Prepares designs and specifications for various complex equipment or systems (e.g., a heating system in an office building, or new electronic components such as solid state devices for instrumentation equipment).

Plans approach to solve design problems; conceives and recommends new design techniques; resolves design problems with contract personnel, and assures compatibility of design with other parts of the system.

Designs and coordinates test set ups and experiments to prove or disprove the feasibility of preliminary design; uses untried and untested measurement techniques; and improves the performance of the equipment. May advise equipment users on redesign to solve unique operational deficiencies.

Plans approach and conducts various experiments to develop equipment or systems characterized by (a) difficult performance requirements because of conflicting attributes such as versatility, size, and ease of operation; or (b) unusual combination of techniques or components. Arranges for fabrication of pilot models and determines test procedures and design of special test equipment.